

**CLAIMS**

What is claimed is:

1. A cancellation system for providing cancellation of interference in a repeater,  
 5 located between a first endpoint and a second endpoint, comprising:

an echo canceler for canceling echo within said system;

a repeater canceler logically connected to said echo canceler, wherein said repeater  
 canceler cancels coupled signals within said system, wherein said repeater canceler cancels  
 coupled signals by using a data signal transmitted from said second end point to said first  
 10 endpoint; and

a bulk delay device that provides a delay to said data signal prior to said data signal being  
 received by said repeater canceler.

2. A cancellation system for providing cancellation of interference in a repeater,  
 15 located between a first endpoint and a second endpoint, comprising:

an echo canceler for canceling echo within said system; and

a repeater canceler logically connected to said echo canceler, wherein said repeater  
 canceler cancels coupled signals within said system.

20 3. The system of claim 2, wherein said first endpoint is a central office and said  
 second endpoint is a customer premise.

4. The system of claim 2, wherein said coupled signals are caused by at least one tone through capacitor located within said system that assures proper signal continuity from said first endpoint to said second endpoint.

5. The system of claim 2, wherein said coupled signals are caused by at least one switch located within said system that provides downstream power to a second system located between said first endpoint and said second endpoint.

6. The system of claim 2, wherein said repeater canceler cancels coupled signals by using a reference signal, wherein said reference signal is a data signal transmitted from said second endpoint to said first endpoint.

7. The system of claim 6, wherein said data signal is derived from a second repeater canceler that determines a series of proper coefficients for use in minimizing coupled signals resulting from data transmission from said second endpoint to said first endpoint.

8. The system of claim 2, further comprising a bulk delay device, wherein said bulk delay device provides a delay to a data signal being transmitted via said system before said data signal is transmitted to said repeater canceler.

9. A method of canceling interference in a repeater located between a first endpoint and a second endpoint, comprising the steps of:

amplifying a data signal received from said first end point in accordance with an amount of power required to drive said signal to said second endpoint;

removing local echo from said amplified data signal;

removing coupled signals introduced by said repeater; and

5 transmitting said data signal to said second endpoint.

10. The method of claim 9, further comprising the step of converting said amplified signal from an analog signal to a digital signal prior to said step of removing local echo, and converting said amplified signal from a digital signal to an analog signal after said step of removing coupled signals introduced by said repeater.

11. The method of claim 9, wherein said coupled signals are caused by at least one tone through capacitor located within said repeater that assures proper signal continuity from said first endpoint to said second endpoint.

12. The method of claim 9, wherein said first endpoint is a central office and said second endpoint is a customer premise.

13. The method of claim 9, wherein said coupled signals are caused by at least one switch located within said repeater that provides downstream power to a second repeater located between said first endpoint and said second endpoint.

14. The method of claim 9, wherein said step of removing coupled signals is performed by using a reference signal, wherein said reference signal is a data signal transmitted from said second endpoint to said first endpoint.

5 15. The method of claim 14, wherein said reference signal is derived by the step of determining a series of proper coefficients for use in removing said coupled signals resulting from data transmission from said second endpoint to said first endpoint.

10 16. The method of claim 9, further comprising the step of delaying said amplified signal after said step of removing local echo and prior to said step of removing said coupled signals.

17. A system for providing cancellation of interference in a repeater, located between a first endpoint and a second endpoint, comprising:

15 means for amplifying a data signal received from said first end point in accordance with an amount of power required to drive said signal to said second endpoint;

means for removing local echo from said amplified data signal;

means for removing coupled signals introduced by said repeater; and

means for transmitting said data signal to said second endpoint.

20 18. The system of claim 17, further comprising a means for converting said amplified signal from an analog signal to a digital signal prior to removing local echo, and a means for

converting said amplified signal from a digital signal to an analog signal after removing coupled signals introduced by said repeater.

19. The system of claim 17, wherein said coupled signals are caused by at least one  
5 tone through capacitor located within said repeater that assures proper signal continuity from said first endpoint to said second endpoint.

20. The system of claim 17, wherein said first endpoint is a central office and said  
second endpoint is a customer premise.

21. The system of claim 17, wherein said coupled signals are caused by at least one  
switch located within said repeater that provides downstream power to a second repeater located  
between said first endpoint and said second endpoint.

22. The system of claim 17, wherein said means for removing coupled signals uses a  
reference signal, wherein said reference signal is a data signal transmitted from said second  
endpoint to said first endpoint.

23. The system of claim 22, wherein said data signal is derived by a means for  
20 determining a series of proper coefficients for use in removing said coupled signals resulting from data transmission from said second endpoint to said first endpoint.

24. The system of claim 17, further comprising a means for delaying said amplified signal after removing local echo and prior to removing said coupled signals.